Virginia WILDLIFE

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V. S. C. C. photo

February Sky at Cape Henry

Virginia WILDLIFE

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A Monthly Magazine Dedicated to the Conservation, Restoration, and Wise Use of Virginia's Wildlife and Related Natural Resources, and to the Betterment of Hunting and Fishing in Virginia

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Molly Cottontail reaches for a nourishing tidbit in the wintry snow. Moral: help feed wildlife during critical winter periods.

(National Audubon Society Photo by Watson)

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SPINNING MAY REVOLUTIONIZE FISHING

THE TRADITIONAL feud between American anglers may at last be finding a measure of settlement. How the aloof fly fisherman and the humble bait caster will yield to their differences is not known, but a solution seems to be in the making. During the past decade a new method of fishing has developed in this country—and the craze is on. Plug fishermen and fly casters now can have something in between. The sport is called "spinning" and owes its allegiance, in part, to the inventiveness of a Pennsylvania rod maker named J. W. Smith, whose remarkable spinning rod and reel started anglers going wild all over America.

Any apparatus, thought Mr. Smith, that could combine the good features of bait casting and fly fishing and eliminate the bad points of both, could prove amazingly popular with the fresh water fishermen. So he put his ingenuity to work and developed a special type of rod and an intricate reel which could accomplish just such a purpose. What has followed is now history.

The term *spinning* is a little misleading and may be prone to evoke chuckles or even hearty laughs from some anglers. Yet upon closer observation one can readily see that such a method of fishing not only has good points, but has already been tried in more or less modified form for many years. After all wasn't it just within the lifetime of most of us that the casting reel and the silly plug received the same reaction?

Except for the reel, the spinning gear is simple. The rod is a sort of combination fly rod and casting rod. It possesses some of the flexibility and backbone of each. Yet its convenient length is no more than seven feet. The rod guides are large and open and are designed to carry a braided nylon line or monofilament line of the level type. The handle and reel seat are much like that of the regular casting rod.

The reel is a two-section affair with the lower part built on the order of the quadruple multiplying casting reel. The upper section consists essentially of a spindle which lies parallel to the main axis of the rod. The spindle is open at the end and acts simply as a core to hold the line that is in immediate use. The storage of additional line is made by the spool of the lower section.

A clutch device sets the two parts of the reel in motion. When the line is reeled-in the disengaging action of the two parts is automatic, thereby permitting the operator to make his next cast without interruption or the necessity of manipulating the reel in any manner. A curved arm helps to wind the line perfectly onto the spindle when the two parts operate together in the reeling-in process. Backlashes are impossible.

Casts upward of 100 feet are possible without the need of back casts. The only requirement needed is the technique of handling the rod and its snapping action to give the light lure its force in the cast. Heavy flies, bucktails, streamers, bassbugs, and other similar light lures are especially well handled. This type of rod and reel is particularly suited for brushy streams where overhead clearance is limited. It is also very useful in fishing fast-moving, deep streams where most of the casting must be done from the bank.

Recent developments in the field of surf spinning reels have been notable. Many surfmen claim that now we have the anwser to a surf fisherman's dream. Spinning tackle for salt water game fish is getting more popular each year. Fast fish like the ladyfish and small tarpon now have their match. Joe Brooks says spinning is deadly on bonefish.

The sport of spinning is not new in the world. Our English cousins have used this principle in their angling for a great many years. Should the sport continue in popularity in this country, as it seems to be, then we are on the threshold of a new and more diversified fishing era. And who among anglers would scorn such a delightful new development? After all, isn't it more sport, more fun we're after, and not the fish?

Americans are having more and more leisure time. We have gained upwards of 11 per cent in our leisure time since 1900. Much of this free time is going into fishing—fishing not for fish so much as for enjoyment. The innovation of spinning fills a much needed gap in our piscatorial techniques of "getting the most out of hooked fish." After all that's where the sport is. When a fish is DEAD the sport is gone. Welcome spinning!

—J. J. S.

The dawning of

A NATIONAL CONSERVATION PROGRAM

By A. WILLIS ROBERTSON
U. S. Senator from Virginia

EDITOR'S NOTE: *This article was originally prepared by Senator Robertson back in 1934 for publication in the "Virginia Field Trial Association" magazine. In it he enumerates the steps that were being taken in behalf of wildlife conservation in a national way. Senator Robertson says in a recent letter that " . . . part of the program which I promised in 1934 was the Pittman-Robertson Act, under which Virginia has received $1,380,966.88 including the current allocation (1953) and $79,757.23 under the Dingell-Johnson Act to improve fishing waters. It also got a number of lakes built subsequent to 1934 by the CCC and the program also included my Coordination Act of 1946, under which the Army Engineers were required to cooperate with federal and state agencies in the protection of wildlife interests in the construction of flood reservoirs and power dams, etc."*

The article will give the reader a chance to compare performance with promises.

IT IS an ill wind that blows no good" is an old saying and worthy of acceptance. From the dark storms of four trying years has been blown to us a realization that a wider use of the Golden Rule in business would be helpful: that it is not safe to place too much dependence for happiness in the possession of material things: and that the industrial development of even this young nation has now reached the point when we can no longer use haphazardly or recklessly squander the natural resources with which we have been endowed by a most gracious Providence.

The members of the Virginia Field Trial Association, who were my helpful co-laborers for seven years in the development of a conservation plan for the Old Dominion, and who through those contacts knew of my deep interest in every phase of wildlife conservation, can well appreciate the joy that I have experienced in seeing emerge from the depression a national program, on a magnificent scale.

When I played tackle at Richmond College, I soon learned that if I did not open up a hole wider than a couple of feet my backfield would not make a gain. In subsequent years, I have learned that holes have a way of closing in on you, and if one does not have an excess of power you can't deliver to the differential what a given speed actually requires. This thought was well expressed by Robert Browning, when he said: "Man's reach must exceed his grasp or what's a Heaven for." In 1926, and in the years immediately following, the Virginia Commission laid out an ambitious program for the State, although I fully realized that during my term as chairman our objectives would not be reached. The Federal agencies are now engaged in laying out the most ambitious conservation program the Nation has ever seen. Some of the objectives will not be immediately reached, and some of them will, possibly, never be reached, but the heartening factor in the situation is a clearer realization of the importance of the problem and the commencement of a definite program.

For many years, the conservation leaders have told us about the disappearance of the buffalo, the wild pigeon, the heath hens, etc., but we still had such an abundance of other wild birds and animals that the disappearance of a few species made no great impression. Then came four or five years of drought and when we took count of our duck population in the spring of this year, we found that by the most liberal estimate we had not more than 25% of the birds that we had a decade or more ago. And, we realized that unless we did something of a constructive character and did it at once another decade would see the end of migratory bird shooting in the United States.

For many years, foresters have been telling us that unwise cuttings, coupled with unchecked forest fires, would not only result in an eventual shortage of commercial timber but would in the end change the character of our climate and make useless for agricultural purposes millions of acres of previously fertile soil. However, sawmills continued to turn out finished lumber and the fact that Virginia, once rich in all of the best types of lumber, was buying its framing in the South, its doors and window sash and trim from the Pacific Coast, caused us no great concern. It remained for the depression to disclose to us that there were not less than a million farmers in the United States vainly struggling to make both ends meet on about fifty million acres of sub-marginal land, the fertility of which had been largely ruined by erosion, and the awful drought of the spring and summer of 1934, to make us realize that the climate in some eight or ten mid-western states had so radically changed by reason of timber removal, indiscriminate breaking of sod land and the draining of pond and marsh areas that those states were rapidly heading for a desert status.

When the national income during the depression dropped from about eighty billion dollars to about twenty billion dollars, an analysis was made of the source of income and it was found that those dealing in sporting goods had suffered relatively less than any other class, and that the direct national investment in hunting and fishing was about six hundred million dollars, which, combined with indirect expenditures, made of it a billion-dollar industry. An examination of the commercial fish and sea food industry showed that to be another billion-dollar industry, although suffering heavily during the adverse years.

Were it not for the constructive conservation program (P.R.) in the earlier years, sights such as this one at Lake Mattamuskeet, N. C., would not be evident today.

U. S. Fish & Wildlfe Service photo by Schmidt

President Roosevelt, who as a young man had been an enthusiastic sportsman, and who as Governor of New York had taken a lively interest in all phases of conservation, was fully aware of the importance of the problems that confronted us and took prompt steps after March, 1933, for the formulation of a national program. He recommended the creation of the Civilian Conservation Corps as a conservation as well as an unemployment activity. He brought to the head of the U. S. Forest Service Hon. F. A. Silcox, a Southern man who was an expert forester and a business executive of great ability. In the national forests in Virginia the Federal Government owns over half a million acres, and plans are now in progress to round out the George Washington, Shenandoah and Unaka National Forests to include over a million acres of mountain land, extending from Frederick to Bristol along the Blue Ridge, and from Highland to Wise along the Alleghany Mountains. There are approximately 163,000,000 acres of land in the national forests of the country, and a big acquisition program has been mapped out.

In the Public Domain there is an additional 173,000,000 acres, to say nothing of many additional millions of acres now in private possession without legal right, for which a land utilization program is being planned to include wildlife and recreational management.

The President brought to the U. S. Bureau of Fisheries Honorable Frank T. Bell, an able conservationist from the State of Washington. By direct appropriation and allocations from the Public Works Administration, the Bureau of Fisheries was given funds to build many new hatcheries, to engage in stream pollution studies, and to survey for development and restocking the water areas of the national forests and the Public Domain.

The President appointed as Chief of the U. S. Bureau of Biological Survey Honorable J. N. Darling, a man who had made an independent fortune as one of the leading cartoonists of the nation and who as a member of the Fish and Game Commission of Iowa had made a national reputation in the field of wildlife conservation. Mr. Darling's middle name is "Now." He has galvanized the personnel of his Bureau and sent to the field for practical work a number of scientists who for many years had been engaged in wearing the fuzz from their pants in office chairs in Washington. The President has made available to Mr. Darling for immediate use eight and one-half millions of dollars to be expended in an effort to save the duck situation, and other millions have been tentatively promised for a suitable upland game program in each of the forty-eight states.

In the latter connection, the President appointed early in 1934 a committee of three distingnished conservationists, Hon. Thomas H. Beck of Connecticut, Chairman, J. N. Darling of Iowa and Aldo Leopold of Wisconsin to formulate a constructive program. The report of this committee has attracted national attention. It laid out a program which has been in principle endorsed by the President, calling for the minimum expenditure of twenty-five million dollars and a maximum expenditure of fifty million dollars. The President then created in the Department of Agriculture a Land Utilization Board, in the Federal Emergency Relief Administration a board to deal with Subsistence Homesteads, and in the Department of the Interior a National Planning Board, which on June 30th, last, was largely superseded by the National Resources Board. All of these agencies had definite instructions to give full consideration to wildlife conservation and to work with a view to the better coordination of the conservation activities of the Bureau of Fisheries in the Department of Commerce, the Bureaus of Forestry and Biology in the Department of Agriculture, and the Bureaus of Parks, Reclamation and Public Domain in the Department of the Interior.

Honorable George M. Wright of the National Park Service was appointed Director of the Recreation Division of the National Resources Board.

The President has requested the National Resources Board to submit to him its report on October 15th, with a view to enabling him to submit recommendations to the Congress that will convene on Jan. 3, 1935.

It has been my happy privilege to interest the House of Representatives in this program. During the special session of the 73rd Congress, I introduced a resolution to create a special committee of the House on the Conservation of Wildlife Resources. Action on this resolution was not had until the regular session in 1934, when the resolution was adopted and the late Speaker Rainey paid me the high compliment of naming me as chairman of that committee. The committee was promptly organized and commenced the taking of testimony. Before this article is printed there will be ready for distribution the printed hearings of our committee, a volume of over 200 pages in which almost every phase of wildlife conservation in the United States from a national standpoint is covered. These hearings will be available to the National Resources Board and, in my opinion, will lay the foundation for the report to be submitted to the President by the Recreation Division of that Board.

Wordsworth wrote: "My heart leaps up when I behold a rainbow in the sky." There is a rainbow of hope in the sky for wildlife conservation in Virginia. When the Governor selected Honorable Carl H. Nolting as my successor, I publicly expressed great satisfaction over that appointment. He has fully justified my opinion of his qualities. In coming years, many a young sportsman of the present day will feel that his life was made richer and happier by reason of contact with that nestor of wildlife conservation in Virginia, Hon. M. D. Hart. In G. W. Buller, Virginia has, in my opinion, the best practical fish culturist in the United States. Virginia's Superintendent of Game Propagation is regarded as one of the leading biologists in the country engaged in the practical production of more game. The U. S. Forest Service is formulating plans for the establishment of demonstration refuges in its national forests in Virginia, and with the assistance of the State Conservation and Development Commission, is developing a series of beautiful fishing lakes and recreational centers near Waynesboro in Augusta, in Arnold's Valley in Rockbridge, near Clifton Forge in Alleghany, and near Marion in Smyth. Hundreds of C.C.C. workers are engaged in the development of the Shenandoah National Park, state parks, battlefield parks and national monuments throughout the Commonwealth. When the crisis in the duck situation has been met, the Bureau of Biological Survey will no doubt develop an experimental game farm in Virginia, for which purpose the Camp Lee Refuge will be ideally suited.

"It is an ill wind that blows no good." It is not too late to save a great national resource. Following the devastation of the War Between the States, the people of Virginia were poor but proud. Following the economic war that commenced in 1929, the people of Virginia and of the nation at large can learn that they can be, if necessary, poor but happy. No man in the truest sense can be said to be poor who is rich in health and a co-owner in the riches of a clean and wholesome

. . . nor would we have the fishing that we now enjoy under the Dingell-Johnson program.

out-of-doors. It will assist us in making necessary adjustments if we can catch the joyous spirit of Robert Louis Stevenson when he wrote:

"We are in such haste to be doing, to be writing, to be gathering gear, to make our voice audible a moment in the derisive silence of eternity, that we forget that one thing, of which these are but the parts—namely, to live. We fall in love, we drink hard, we run to and fro upon the earth like frightened sheep. And now you are to ask yourself if, when all is done, you would not have been better to sit by the fire at home, and be happy thinking. To sit still and contemplate,—to remember the faces of women without desire, to be pleased by the great deeds of men without envy, to be everything and everywhere in sympathy, and yet content to remain where and what you are—is not this to know both wisdom and virtue, and to dwell with happiness? After all, it is not they who carry flags, but they who look upon it from a private chamber, who have the fun of the procession."

FISHING

(Author Unknown)

A feller's glad to be a friend, out fishing;
A helping hand he'll always lend, out fishing.
The brotherhood of rod and line,
And sky and stream, is always fine;
Men come real close to God's design, out fishing.

A feller isn't plotting schemes, out fishing;
He's only busy with his dreams, out fishing.
His livery is a coat of tan,
His creed—to do the best he can;
A feller's always mostly man, out fishing.

A feller gets a chance to dream, out fishing;
He learns the beauties of a stream, out fishing;
And he can wash his soul in air,
Than further foul with selfish care,
And relish plain and simple fare, out fishing.

A feller has no time for hate, out fishing;
He isn't eager to be great, out fishing;
He isn't thinking thoughts of pelf,
Or goods stacked high upon a shelf,
But he is always just himself, out fishing.

A feller never is too mean, out fishing;
His thoughts are mostly good and clean, out fishing;
He doesn't knock his fellowmen,
Or harbor any grudges then;
A feller's at his finest when—out fishing.

The rich are comrades to the poor, out fishing.
All brothers of a common lure, out fishing.
The urchin with the pin an' string,
Can chum with millionaire an' king;
Vain pride is a forgotten thing, out fishing.

Leopold defines conservation as a state of harmony between man and the land.

The Warp and Woof of Conservation

By DAN SAULTS
(from *Missouri Conservationist*)

I LIKE this title . . . it sounds remarkably impressive and serves to demonstrate something that must have bemused all writers at one time or another: *definition.* I don't know quite what a woof is, except that I feel it must have been invented by Lewis Carroll for his Jabberwock poem, and I'm even more vague about a warp except as it might affect the set of my casting rod. But I feel certain that warp and woof have to do with weaving. I'll proceed on that assumption in creating a simile to lead off this piece.

All life can be visualized as a great tapestry woven of billions of tiny threads against a background of soil, a tapestry created in a vast pattern of many details, so that one cannot see the picture whole but only in part. Man, trying to look at this tapestry in which he is woven, may see no further than that portion of design outlying the dollar mark or the war chariots. He cannot, usually, see the microscopic details, the tiny threads that are supporting him; nor can he visualize the far-flung spread of the whole cloth. And he has vast difficulty even remembering that the tapestry rests upon a background into which the entire design has been stitched, so that without the background there is nothing but chaos.

This Tapestry of Life is not just man, nor fish, nor game; it is not just forests and water and soil and plants. It is all life: the elephant and the microbe, the whale and the plankton; it is all energy and matter.

The effort to see this tapestry whole, to visualize design, threads and background in a single great unity . . . this we call philosophy. And what is conservation but the effort to keep the tapestry from unraveling, to keep the threads whole and in place.

"Warp and woof" is a phrase all of us use with glib ease—but I, and probably you, don't understand what it means, except that it has to do with weaving. Conservation, the subject all of us are going to discuss here, has a multitude of such words and phrases; we toss them about gaily in our newspaper columns, our magazines, our radio speeches—but we aren't quite sure what we really mean by them, and those who read or listen to us are still less sure—though sometimes more positive they *do* know.

Just what do we mean by ecology, habitat restoration, flood control, or game management? Just how do we distinguish between "sport" fishing and "non-sport" fishing, between "sportsman" and a guy with a gun? In fact, how do we define conservation, so that it will have the same meaning to all of us.

Missouri's late E. Sydney Stephens defined conservation as the wise use of all resources—including the human resource. But who shall determine what is "wise use" and how shall we sell this to every human being in the land today, without giving him or her a college degree and then pointing out the application required?

Wisconsin's late Aldo Leopold described conservation as man living in harmony with his environment. That's sound enough. But how many will understand what the great Leopold meant?

The word itself can't be defined for the masses. It includes too many things: the test tubes of science, the ponderings of philosophy, the identification of species, new economic theories, the overtones of naturalistic religion. Conservation applies to soil, water and air; it is discussed in game seminars and by oil geologists; it has many aspects and few indeed can see the

picture whole . . . the tiny thread and the far-flung spread.

Our economic philosophy is opposed to conservation philosophy. We do not build our clothes, our machines nor our houses for long use: our pattern demands fast turnover and the encouragement of rapid replacement. Our major principle is production for destruction; our advertising creates desire for some article that has no tangible value and that will wear out rapidly.

Now granting that conservation must be opposed to the economic environment created by advertising—and I think most of you will grant it, upon reflection—the educational problem is much intensified. A multi-billion dollar industry is based upon the conventions of style, of urging people to throw away clothes—not because they are worn out, but because the skirt is two inches longer than a designer said it should be this summer. What is the conservationist's advertising message to counteract this?

Think of all the ads telling you "no home is complete without Woofie's Wonder Widgets . . . " Where are we going to get assuring people it isn't good conservation to buy worthless but resource-devouring widgets, when the Jones have one in *their* living room? And when the manufacturing of widgets is a million-dollar industry?

In fact, you may have noted that it's almost heresy to suggest a manufacturing concern has no business polluting a river and should be closed before it wipes out all aquatic life—along with a few human lives, perhaps. We are told that it's impossible to win our battle against Communism without polluting streams—or turning public land over to private exploitation—or relaxing our forestry regulations—or mining our soil to exhaustion. What is the real motivation when billions of dollars are spent or pledged for high dams but a relatively tiny appropriation for a system of pilot watershed-control plants was cut out by Congress, ostensibly because each one is not set forth as a specific project?

Things look pretty black, don't they? The many figures in the Tapestry of Life are snapping the threads that hold those figures in the design, and we can't make them understand that all of us are going to drop right out of the pattern into oblivion. Do you think I'm laying it on too heavily; that conditions aren't that bad; that science is going to save us, rather than just postpone the day when we have to face up to what may then be insoluble problems?

What shall we do to be saved? I don't know. I can only suggest certain things that we might try, and point out other things that we are doing.

Technologically we have made great advances . . . we've had to, or a lot more people would be starving in the world. We've learned to get the most out of our soil with fertilizers—which, of course, have their own base in the soil. We've learned the principles of ersatz: we've even learned how to take vitamins out of food naturally and put them back in artificially. I have a feeling that we aren't fully utilizing our technological knowledge, that we aren't using science primarily for human welfare.

We can insist that science recognize a moral obligation, too. The men who learn how to split an atom must take part in demanding proper use of atomic fission. Most scientists today, apparently, do have a social conscience, but many of their public utterances disclaim all responsibility for the use to which their findings are put.

In the social field, conservation is quite acceptable although not quite on dinner-table level except at wildlife banquets. Virtually everyone pays lip service to it and it's getting hard to find a man who'll sneer at motherhood, democracy or conservation. The trouble is, we still leave motherhood to women, democracy to Fourth-of-July orators and conservation to government agencies, farsighted laymen and biological scientists. Every political move that has ever been made on any conservation agency has been prefaced with a statement of love for wise resource use.

This may seem sarcastic, and it probably is. Actually, the subject is gaining in social action, at least on some of the fronts. I believe the fish and game field is one of these. While it's true that most anglers or hunters *call* themselves conservationists, some of them really are, and on much broader grounds than obeying game codes. Believe me, a few Missourians, at least, have gone deer hunting and come back convinced that woods-burning is not a healthy practice. And the most active anti-pollutionists I know are fishermen. Certainly it is to their interest to keep the waters clear—which is just the point I want to make! *Let's show more people how it is to their interest and their children's interest, to practice sound conservation.* Let's put Mrs. Grundy to work for us; let's threaten the despoilers with social ostracism and reserve our praise for the man who thinks of tomorrow. I doubt that we can make a good case for profits, in the fields of economics, at least on the short-range side, but we *know* we can make a case for the long haul.

Here we can get somewhere by stressing the "use" motif. Conservation today doesn't mean simply *saving* but using wisely. I realize this can be twisted against us too. We all know you can't "save" fish or game, that natural mortality or range deterioration will kill them off anyway, so our fish and game departments stress wise use through regulations, consciously or unconsciously. Foresters are doing the same thing; so, of course, are the wise agriculture leaders. Note that recreation is being emphasized in the national forests and, in Missouri, on our relatively small state forests. We can stress "use"—so long as you preface it with "wise," and emphasize the need for qualified, trained judgment in deciding what is "wise."

The aesthetics of conservation have too long been our main line of resistance, our defense; we found ourselves lightly gunned and with poor fields of fire. Too

many impassioned pleas were attacked bluntly by saying "You can't eat a sunset." You can't eat ore or concrete dams either, nor does man live by bread alone, but we didn't always think of this in time, nor was it always effective if we did. It certainly isn't effective against a lobby.

Yet the aesthetic approach is a valid one, particularly in hunting or fishing. Granted the gunner or angler wants to kill something, he also must become observant of cover, or be unsuccessful; he must learn something of his prey's habits; he must perforce gain some education in nature. And I think at the risk of going poetic on you, that he must also develop an awareness of earth and water, sun and sky, of the peace that lies in a return to primary beginnings.

This will not make him a conservationist, but you can't understand geometry without knowing addition and subtraction.

We can view our tapestry, then, from four angles: the social, economic, aesthetic, and technological. What about education for conservation?—which probably belongs under the classification of "social" but I want to treat it separately.

I don't think we're doing well educationally; I'm sick unto death of hearing people predict solution of our problems in conservation by the next generation. Their remarks are prefaced by saying: "When these old soreheads die off . . . " And it's a lot of rot; the schools have never solved one great social problem and never will unless the totalitarians have their way. Education *can't* be left to the schools alone. It isn't their job alone.

Maybe we'd better quit worrying so much about formalizing conservation with a definition and a number in the school catalogue. Maybe we'd better start reaching for the people, for everyone, not consciously propagandizing them but just trying to make them believe as we do. Maybe we'd better get a little fire in our own beliefs. The best conservation missionaries I've run across are the new converts. Let's not be wincing at their little blunders, their carelessness with our precious decimal points. Let's search for truth along with our facts.

I've been pessimistic; let me close on a note of optimism. Most of our states are progressing in conservation work, in the field of reaching out to the people, though we may be losing resources. In my own little nook of Missouri, at least, there's a steady improvement in the newspaper outdoor writing, with emphasis now on conservation in the wildlife field and in soil rather than on social notes with rod and gun background. The big outdoor magazines—and some outstanding small ones—have fought some major battles for wise resource use and not just in protecting their specialty. I believe that more people are widening their view of the tapestry, and narrowing their gaze on the threads.

And if the worst happens . . . if we all lose . . . we'll have gone down fighting. At the worst, we'll have been battling for a principle in which we believe, rather than surrendering supinely to the forces of exploitation.

BRIEF REPORT ON EDUCATION AND INFORMATION ACTIVITIES IN THE VIRGINIA GAME COMMISSION DURING THE FOUR-YEAR PERIOD JANUARY 1, 1950 — DECEMBER 31, 1953

HIGHLIGHTS of the education-information activities during the past four years can be summarized as follows:

(1) Improvement in the quality of *Virginia Wildlife*. Circulation boosted from 10,000 to 18,000.

(2) Production of several color motion pictures on Virginia's wildlife. Sixth movie nearly complete.

(3) Film loan service to clubs, schools through use of 40 conservation films; total four-year attendance was 280,000 Virginians.

(4) Annual wildlife essay contest in schools. Some 75,000 Virginia children reached.

(5) Printing and distributing of some 28,000 posters on gun safety and game conservation; distribution of 400,000 gun safety leaflets.

(6) Regular weekly news service to the press and clubs, including radio broadcast.

(7) Continued educational field program to schools and clubs, plus a lecture service to clubs by Richmond office personnel.

(8) Printing and distribution of several publications on the State's wildlife, including reprinting the "Birdlife of Virginia;" 5,000 copies originally supplied schools.

(9) Annual exhibit at State Fair. Gained first state prize in 1950; also, assistance with numerous county fair exhibits.

(10) Information service. Over 400,000 separate pieces of material on state's wildlife sent to public.

HAVE YOU ORDERED YOUR SEED?

HAVE you taken a look at your favorite hunting grounds recently? Chances are you'll find quite a difference in the way it looks now and the way it looked the last time your dog found that covey along the old fence row.

There was plenty of food then. Lespedeza and ragweed seemed to be about everywhere. Cover was plentiful, too, and it seemed that no amount of snow, wind, ice, rain, or anything else could do away with the food and cover that was on the ground at that time. It comes as somewhat of a shock, then, to see that what looked like a year round cover and food supply is now pretty well beat up. There just doesn't seem to be a place for bird or animal to hide its weary head. The wonder is that any wildlife survives under such conditions.

Not all of the food and cover you saw last fall is gone of course, but a big portion of it is. Where food and cover is still plentiful, chances are that is where your game will be next fall.

It has been said that "the future belongs to those who prepare for it." The hunter, sportsman or landowner who takes steps this winter to see that the necessities of life for his game are present all year round is the man who will have a successful hunting season next fall.

The field personnel of the Commission of Game and Inland Fisheries, the district game biologists and county game wardens are all in a position to help the landowner or sportsman secure material for planting food and cover. If he doesn't already know these men, it's a good time for him to get acquainted with them. In addition any of these men, as well as Soil Conservation District personnel, will be happy to give advice to anyone on any phase of wildlife habitat improvement.

The Game Commission is again prepared to distribute, through their personnel, and through the Soil Conservation District personnel, annual seed in the form of wildlife mixtures and milo maize for food patch plantings, and shrub lespedeza seed for border planting. Experience has shown that direct seeding of shrub lespedeza is a lot easier than planting the plants and good results may be expected if planting instructions are carefully followed.

The shrub lespedeza seed and the annual seed may be planted anytime after the danger of frost is over and up to May 15 or June 1. Since the supply of seed is limited, however, it will be necessary for anyone interested in obtaining seed from the Commission to place their orders early.

The important thing to remember is to get in touch with your county game warden, county soil conservationist, or district game biologist and let him know what you will need in the way of seed for this spring's planting. Details on planting may be obtained from the county warden, the game biologist or by writing to the Commission's office in Richmond. Of course, anything else that can be done this winter towards getting the land ready for planting next spring will be that much less to do next spring during the busy season. Plowing and discing the ground for the patches in preparation for spring planting will put you that much ahead. The more thought and care that goes into these plantings, the more likely they are to succeed. Proper location, preparation, fertilization, and seeding will insure success. The road to better hunting is not easy nor the going smooth. Lip service and good intentions alone will not improve it. Improvement will come only when those who hunt will make a concerted effort to better the home of wildlife. When a hunter begins to "plant in the spring where he hopes to harvest in the fall" he is really improving the road for wildlife and his own future.

Whoopers on the Aransas Refuge in Texas. U. S. Fish & Wildlife Service photo by Stevenson

WHOOPING CRANES STILL NUMBER 21

TWENTY-ONE whooping cranes reached their destination safely in their last annual fall migration from Canada to Texas. United States Fish and Wildlife Service officials at the Aransas National Wildlife Refuge on the Gulf Coast report that 18 adult cranes and three young ones made the long flight successfully and settled down for the winter on the federal sanctuary.

Twenty-one was also the official count last April when the cranes took off for the north. A report from Saskatchewan, Canada, however, discloses that three additional cranes were observed there, winging southward, on November 5, so the count may come to 24 when the last stragglers arrive.

As the whooping cranes—North America's largest and rarest migratory birds—prepared to head south, pleas were made to the public jointly by the National Audubon Society and the United States Fish and Wildlife Service, urging safe passage for the majestic white creatures to their Texas wintering grounds.

In their southward flight the whooping cranes—so-called from their blaring hornlike call—travel in long lines or V's at great heights over North Dakota, South Dakota, Nebraska, Kansas, and Oklahoma into the Aransas National Wildlife Refuge on the Gulf. The major stopover is along the Platte River in Nebraska where the giant birds usually spend a number of days resting and feeding.

Since the cranes have been protected by federal law since 1913, persons shooting or otherwise molesting them are committing a federal offense as well as jeopardizing the crane's fight for survival.

The whooping crane (*Grus americana*) was one of the birds described and painted by the great naturalist-artist John James Audubon (1785-1851). Formerly it bred from Mackenzie and Hudson Bay to Nebraska and Iowa and, in migration, it was not uncommon from New England to Georgia. It wintered from the Gulf states to central Mexico.

The whooper is white, with black wing-tips, small bill and long legs. It has a length of 49-56 inches; a spread of 76-92 inches. It flies with low, heavy flappings in moving about on its feeding grounds, but in migration it rises to tremendous heights, flying with neck extended and long spindly legs trailing behind, but its cries can still be heard clearly. Audubon said that he had heard it three miles away. Like the trumpeter swan, it has a long convoluted windpipe sometimes nearly five feet in length which is believed to add force and resonance to its peculiar voice, with its vibrant overtone or roll.

The whooper's chief inland haunts are savannas, marshes, prairies and the low grassy shores of rivers, lakes and lagoons. It is extremely wary, preferring to feed in open places where its height enables it to keep watch in all directions. It feeds on such vegetal matter as grain, seeds, the roots and tubers of marsh plants, and a large ration of animal food, mainly mice, moles, snakes, lizards, frogs, insects, worms and many small forms of aquatic life. The huge cranes travel about a marsh principally on foot, with long strides which cover the ground at amazing speed.

The whooping crane is sometimes mistaken for the snow goose, white pelican, American egret, or whistling swan. During the migration to the south in the fall of '52, at least two cranes from the diminishing band were killed by gunners, one in Saskatchewan and the other in Kansas, despite the strict Canadian and United States regulations. Hunters, therefore, are being urged to refrain from shooting at any large white bird and to report the sighting of birds that might be whooping cranes to the nearest conservation officer. The great white whoopers are no longer fair game.

VIRGINIA WILDLIFE

CONSERVATIONGRAM

Late Wildlife News . . . At A Glance

BASS FISHING REGULATIONS LIBERALIZED. At a recent meeting of the Game Commission, action was taken to remove the closed season on bass in all public impoundments of the state and all public streams east of the Blue Ridge except those which are stocked with trout. Decision was taken after careful study by fish biologists showed that comparatively few bass are caught off their spawning beds in early spring and that the breeding potential of bass is so great that the species will actually be benefited if a lesser number of small bass survive to compete with others of their kind for existing food.

BIGGER BUCK KILL WEST OF BLUE RIDGE. During the recent deer season west of the Blue Ridge 5130 buck deer were killed. This compares with the 5534 deer—both buck and doe deer—killed in November 1952. During the recent open season for deer, there were 889 more buck deer killed than in the previous year.

FISH PLANTING RESUMED. Rains so restored the streams of the state that the initial planting of bass, bream and crappie, delayed by the extreme and continued drought, has been resumed, according to G. W. Buller, chief of the Fish Division of the Commission of Game and Inland Fisheries.

POLLUTION PENALTY PAID FOR ROANOKE RIVER FISH KILL. The State Water Control Board forwarded to the Virginia Commission of Game and Inland Fisheries a check for $948.38, part of the penalty collected by the Board from the John Puhl Products Company of Chicago, whose plant at Salem, Virginia, killed a large number of fish in the Roanoke River on July 30, 1953.

LAKES NAMED FOR SENATOR BURTON AND ROBERT CONNER. The two public fishing ponds recently developed by the Commission in Pittsylvania County and Halifax County, have been named respectively for Senator Frank P. Burton, who worked so unceasingly to get the pond constructed in Pittsylvania County, and for Robert G. Conner who deeded to the state the land in Halifax County for pond construction.

OVER 200,000 SEE COMMISSION FILMS. Between 1950 and 1953, 220,175 people attended 2542 showings of Commission films. Of this number 16,675 people viewed a total of 313 films shown by the two special services officers of the Commission.

PLAQUE TO PENNSYLVANIA FOR WILD TURKEY PROGRAM. Publisher Godfrey Hammon of "Outdoor Life" presented the magazine's conservation plaque to Pennsylvania's Governor John S. Fine who handed it over to Game Commission director John C. Herman, since the award was made for the Keystone State's effective wild turkey program.

DECLINE IN MIGRATORY FINFISH. Virginia, North Carolina and Maryland are engaged in a comprehensive cooperative research program which will seek to discover, understand and remedy the cause of the alarming decline in the abundance of migratory finfish along the central Atlantic coast, affecting primarily the fisheries of the Chesapeake Bay and Pamlico Sound.

PAMPHLETS ON POLLUTION. The United States Public Health Service has published a group of pamphlets stressing the pollution in different sections of the country. They are available locally through the health departments of the various states.

EMERGENCY WINTER FEEDING aids wildlife. Critical periads af ice and snow are most vulnerable.

Spend a night or twa constructing wildlife nesting boxes and hames. Habby is most rewarding.

TURN YOUR SPARE
Worthwhile WILDLIFE

Here are some practical things yo
a hobby, and

Commissi

FIELD TRIPS for bird and animal study can be lats af fun; will add to yaur storehouse of nature knawledge.

Gaad club praject is to plant local power line rights-af-way with perennial wildlife foods.

TAXIDERMY can be absarbing as well as profitable. Dead wildlife for maunting frequently can be found along roads, around homes.

As soon as the ground unfreezes planting can begin for trees and shrubs. Gullies, ravines, eroded areas should be planted up.

Read up on wildlife and nature. Only through knowledge will the full meaning of conservation be known.

NTER HOURS INTO A ONSERVATION HOBBY

n do. The important thing is, pick w it through.

photos

Visit some farmer and offer to help him with a conservation project. Offer a day or two of free service.

In trout country there is always need of stream improvement. Makes an excellent club project.

OUTDOOR PHOTOGRAPHY can be movies or still pictures. Amateur wildlife photographers are increasing.

U. S. Fish & Wildlife Service photo by Haddon

The Bobwhite Story

By I. T. QUINN
Executive Director

CAN pen-raised Bobwhite quail be produced profitably for propagation purposes?

For many years a large number of State game departments have been spending in the aggregate hundreds of thousands of hunters' dollars raising quail under artificial conditions, using the electric incubator method, trying to increase the quail population. Ironically, most of this money has been thus spent in the South where the heaviest Bobwhite population exists.

In the past, most of the revenue which goes to run game departments from Virginia south and west has come from the quail hunters.

High priced agricultural products during the past twelve years have been an inducement to farmers with modern machinery to expand their agricultural acres and practice "clean" farming. This type of farming has reduced immeasurably suitable habitat for quail, has reduced the food supply, and destroyed protective cover and nesting sites. "Clean" farming has spelled death and destruction to more than fifty per cent of the annual quail crop in the South.

In order to increase quail propagation on the land, State game departments first introduced tens of thousands of a smaller, inferior subspecies of the Bobwhite from the Republic of Mexico. This little bird was to take the place of the proud, haughty eastern Bobwhite. This effort failed, and should have, because it is not the type of bird that the American hunter had been accustomed to down through the years. When flushed in front of the hunter's brace of bird dogs, the immigrant bird had no more sporting pride than to light in neighboring trees.

Game departments soon realized that quail populations could not be sustained and maintained with this almost worthless bird. What could be done to produce and maintain our native Bobwhite populations? Half-baked wildlife scientists (this was before the day of scientific game management) conceived the idea that if we would have plenty of the greatest game bird on the Continent to survive and multiply to meet the needs of the hunting sportsmen, we could raise the birds as the chicken farmer does on his modern poultry farm. Game departments bought electric incubators, brooders and every other kind of modern equipment. Individual nesting pens were built, birds were trapped in the wild and paired off, and storehouses of mash and other food were purchased and stored. Literally thousands of birds were produced and planted throughout the states. Everybody was convinced that a final solution to an adequate quail population was forthcoming.

Alabama, Tennessee, Georgia, the Carolinas, Maryland and Virginia were right out in front. Other states took up the work. Some states, due to climatic conditions, that had never had many quail, entered the propagation field. Hundreds of thousands of birds were raised and planted. When the season for hunting was opened, hunters with their priceless dogs, trained at great expense, sallied forth for an old-time day's sport afield. Still and movie cameras were carried along to get pictures of the once lost sport brought back to the fields by game departments with sportsmen's dollars.

But, lo and behold, there were no more birds than there were the year before. What was the matter? Thousands of hunters and landowners called or wrote their game commissions to know the reason why. Embarrassment and bewilderment was the order of the day. No one could tell the reason why. Someone suggested that next year birds raised at the "game farms" should be banded before they were released. In this way it was hoped that first-hand information could be obtained. The Virginia Game Commission selected a first-rate quail area and removed every wild bird from the fields. September came and birds in adequate numbers were banded and released on the area. November twenty arrived and the season was opened. Hunters with well

trained dogs were sent out. They hunted all day and the next. Only one banded bird was found. The neighboring fields were hunted without success.

Other states contrived other means and devices with about the same success that Virginia had met.

Surely, pen-raised birds was not the answer.

What was the next step? Ding Darling, the famous cartoonist and sportsman deluxe, had just been appointed to head up the old U. S. Biological Survey. He immediately called a few interested men to Washington. It was decided to ask Congress to appropriate some funds to establish a few wildlife research units at strategically situated land-grant colleges. The Bill provided the modest sum of $42,000 for research work. The Sub-Committee of the House Appropriation Committee, of which the able late W. B. (Buck) Oliver of Alabama was Chairman, met and deleted the meagre $42,000 from the Bill. Ding got the writer on the telephone and told what had happened. Mr. Oliver was a warm, personal friend of mine, and I was vain enough to believe he had confidence in me. I got Buck on the telephone and he agreed to put the requested appropriation back in the Bill; he did and it was passed.

With the financial assistance of state game commissions, the land-grant colleges and experiment stations' seven units (there are now forty-three) were set up. In time embryo game biologists and technicians were ground out and put to work to find the answers.

Well, it is the common belief that they have at least found out some of the essential facts. They have told the administrators of game commissions the simple truth that we should have known all the time; that the Bob-white quail, like members of the human family, must have food three hundred and sixty-five days of the year; that it must have cover to protect itself from the weather and from its natural enemies; that it must have a suitable place to nest and raise its offspring—just the same as man. Finding these facts and placing them on the desk of the administrator has brought about a new phase in the evolution of game management in this Country.

Since July 1, 1948, when the long-range wildlife program became effective, Virginia has made habitat improvement for farm game on agricultural crop lands totalling 3,017,000 acres and continues to expand its wildlife program. There were more quail in Virginia last year than there have been in a good many years. What is true of the results here has been equally true in other States.

To what extent habitat improvement has been responsible, I cannot say, but it looks like it is the best program game commissions have inaugurated during the past twelve or fifteen years. What the final result will be remains to be seen.

Through the Soil Conservation Service, in cooperation with state game departments, a woody perennial legume, commonly called bicolor lespedeza, has been developed —and in many strains. At first this plant did not mature its seed before frost in the higher altitudes. Game biologists through selection methods have now developed

Top, Left:
Far lack af faad and protective cover farm game na longer is faund an this farm. This used ta be quail land.

Lower, Left: A living fence supplies winter caver for farm game.

Top, Right:
Where game farmerly existed in abundance, the removal af timber and erasian of soil have destroyed farm game habitat.

Lawer, Right: A living fence af multiflora rase furnishes pratective cover and nesting grounds far farm game.

strains of this plant that will mature before winter sets in.

During the past year the Virginia Game Commission has planted or caused to be planted more than 2,000,000 bicolor plants and 4,500 pounds of seed. Strips 15 feet wide and 400 feet long require 1,000 plants or one pound of seed to supply one covey of quail. The plantings in Virginia, therefore, should be sufficient to maintain 6,500 coveys of Bobwhites during the winter. With an average of ten birds to the covey, it means that 650,000 quail will have adequate food supply during the most critical period of the year. Most of the other quail producing states have a program similar to that which has been activated in the Old Dominion. These plants and seed are supplied to farmers gratis with instructions as to where, how and when to plant and cultivate these plants so as to produce adequate seeds as food for the birds.

Bicolor has a wonderful root system and when planted on suitable areas will prevent soil erosion. This makes the plant very popular with the farmers and they are glad to utilize the plant for this purpose.

In the evolution of the present program and the romance of Mr. Bobwhite, I cannot help but wonder just what the program will be twelve or fifteen years from now. Whatever it is, you can rest assured your Game Commission will be behind the soundest program that man can devise.

The MID-CENTURY CONFERENCE

THE Mid-Century Conference on Resources for the Future was held in Washington, D. C., at the Shoreham Hotel, December 2nd, 3rd and 4th, and was attended by more than 1600 representatives of natural resources agencies, scientific institutions, conservation groups and industry.

Initiated by Resources for the Future, Inc., a non-profit corporation devoted to research and education in the field of resources development and conservation, the Conference was financed by a special grant from the Ford Foundation. The objective of the Conference was to survey the natural resources of the nation, explore the demands that may be placed upon them during the next 25 years, and investigate methods of use and conservation.

The Conference recorded no votes, approved no resolutions, but sought to answer questions pertaining to the following three major areas of resource status:

1. What will the nation's resources base be during the next 25 years? What critical situations may arise?
2. Can such situations satisfactorily be left to extemporaneous solution or have we reached a point in our economic development when it is desirable for industry, government and citizens to work toward coordinated resource study and action?
3. Do we know enough about our resources, their interrelationships, the possibilities of substitutions and technological advances, and the needs and resources of other nations, to make it possible to foresee and mitigate critical situations?

In seeking an answer to the above, the highly successful Conference made no attempt to make specific recommendations, but in turn made every effort to block out areas of agreement and disagreement. No specific program for resources was proposed. Rather, an attempt was made to provide the groundwork for policy making by public and private agencies. It was recognized that the nation's first resource is its people, but the questions relating to human resources are so vast they cannot adequately be covered in a Conference of Mid-Century scope.

The Conference was organized to work in eight sections meeting concurrently, each section dealing with a resource area or with an aspect of a total resource picture. The steering committee of each section gave papers intended to provide the springboard for section discussions. Sections were broken down as follows: Section I, Competing Demands for Use of Land, with subsections on urban land and rural land; Section II, Utilization and Development of Land Resources, with three subsections on food and non-wood fibers, timber and wood products, wildlife, scenic, wilderness and other recreational areas; Section III, Water Resources Problems, with subsections on supply use and competitive demand, division of responsibilities among private groups at various levels of government, and evalution and reimbursement; Section IV, Domestic Problems of Nonfuel Minerals, with subsections on tax incentives, new technology, the claim-patent system, and the government role; Section V, Energy Resource Problems, with subsections on unconventional sources, electricity and synthetic fuels, conservation and use; Section VI, U. S. Concern with World Resources, with subsections on commercial policy, investment and development, and market stabilization; Section VII, Problems in Resources Research; and Section VIII, Patterns of Cooperation.

The program opened on Wednesday morning, December 2nd, with a general session, welcomed by Lewis W. Douglas, chairman of the Conference and former Ambassador to Great Britain. The Conference schedule was announced by Norvell W. Page, director of the Conference. President Eisenhower welcomed the vast gathering at the first luncheon at noon.

As common background for all sections, the Brookings Institution prepared a paper on the general outlook for resources for the next 25 years and beyond and this material dealt with trends in population, levels of living, and other factors bearing on production and use of material resources.

The Heath Hen Story

By C. RUSSELL MASON

ONCE a common bird from the Appalachians to the Rockies, the prairie chicken now appears to be one of America's gradually disappearing birds. The eastern relative of the prairie chicken, the heath hen, vanished from the American scene on the island, Martha's Vineyard, in 1931.

When the early settlers arrived on our shores, the heath hen was among the first of American birds to be mentioned in their writings. But records of that time are so incomplete that it is impossible to determine accurately its relative abundance and distribution prior to the nineteenth century. According to the earlier ornithologists, the heath hen roamed from Maine and Massachusetts south to Virginia, and possibly to the Carolinas, chiefly on the sandy scrub oak plains of the coastal areas. That they were undoubtedly common in those days is indicated in the writings of William Wood, who, in 1635, remarked that "Heathcocke and Partridges be common: he that is husband, and will be stirring betime, may kill halfe dozen in a morning . . . their price is four pence a piece."

Heath hens were said to exist on the island of Naushon and Nashawena, of the Elizabeth group off Wood's Hole, as well as on Martha's Vineyard, early in the nineteenth century, but by 1880 they had disappeared from their last strongholds in New Jersey and Pennsylvania, as well as from the Elizabeth Islands and were thereafter found only on Martha's Vineyard.

Early in the twentieth century, the citizens of Massachusetts took steps to protect the heath hen, then reduced to about one hundred in number, and for a time these birds, under protection and with this interest in their welfare, did increase. An extensive reservation was set aside for them in the center of the Vineyard, with a warden in charge, and various measures were taken to build up the stock. However, a fire which broke out in a gale during May, 1916, swept the greater part of the breeding area of the heath hen and undid much of the splendid work that had been accomplished in conserving the remnant of this species. An emergency fund of two thousand dollars was raised by the Federation of New England Bird Clubs to aid in the work of restoration.

U. S. Fish & Wildlife Service photo by Dr. Gross

The last Heath hen on earth.

Various reasons have been given for the extermination of the heath hen but man was evidently largely responsible for its disappearance from its earlier range. Hunting, the destruction of its natural environment, and fire played a great part in its reduction.

It is probable that cats roaming at large on Martha's Vineyard may have taken numbers of these birds. Rats have been designated as a chief foe of the heath hen, but it is doubtful if they played an important part in the struggle for existence. Neither were there any predaceous mammals that threatened it, since foxes introduced on the island had been exterminated, and there were probably few skunks in the region. Most of the hawks present on the Vineyard were largely rodent eaters and owls also played but a minor part in the biology of the heath hen, according to Dr. Alfred O. Gross, of Bowdoin College, who made exhaustive studies of the species.

Diseases, external parasites, excess males, and sterility of males have all been blamed for the extirpation of this bird, but undoubtedly man, with his change of the natural landscape, and fire were the chief factors that brought the bird to such a low point that survival was impossible.

Like the prairie chicken of the West, the heath hen was famed for its courtship display, in which the males gathered on their booming grounds to contest for their mates in exciting dances.

The disappearance of the heath hen is a striking challenge to the people of America to raise a warning signal reminding us that natural resources disappear even when we think about them, and often before we take proper measures to preserve them.

WHY THE GROUNDHOG HAS HIS DAY

By DOROTHY TROUBETZKOY
Editorial Assistant

THE MYTH of *Marmota monax*, alias groundhog, alias woodchuck, alias whistlepig, alias the eastern marmot, is made of sturdy stuff. Probably it will take more than a battery of biologists to blast the notion that the punctual groundhog arises at 11 A. M. on the second of February, shakes off the grogginess of his long sleep and crawls out of his cozy burrow to blink his weather eye and give photographers and reporters his down-to-earth prediction on winter's chances of keeping a grip on things.

If he sees the shadow of his wasted just-awakened self, say the folk philosophers, it will send him back to bed for another six weeks' snooze. Others, more rational, surmise that if he sees his shadow it probably means a cold clear typical winter day and that chill rather than oracular talent makes him scurry back.

If he does not see his shadow, say the folk, he will go foraging abroad and that means "the back of winter is broken." The more rational suspect that the dull shadowless day simply means a thaw and warmer weather to encourage him.

February 2 is mighty early for the furry grass-eating marmot to be abroad at all, especially in the northern states of its range. Actually, the real explanation lies on another hemisphere, with a more temperate climate, and involves a different animal—the European hedgehog, kin to our American porcupine.

So the woodchuck as a wildlife weather prophet is neither an imposter nor a hoax, but simply a case of mistaken identity. To the early settlers, the nearest thing they could find to the familiar creature they had associated with the legend was the woodchuck. Though there were porcupines, they were not dependable hibernators, nor did they curl up hedgehog fashion, and they were scarce or non-existent in many of the colonies which harbored 'chucks. The first Virginians, for example, remarked that the porcupine was extremely rare. Actually, this was the southern periphery of its range, though in prehistoric times it has gone as far south as Tennessee. It is now extinct in the Old Dominion. Not so the groundhog which has flourished best since it acquired human neighbors.

Casting about for a common and dependable hibernator, the colonists made the logical choice of the grizzled or reddish-brown eastern marmot. The real hitch came with the difference in climate. February 2 might be temperate enough to be tempting in Old England, but the snow was apt to be drifted high in New England and often even in Virginia which once had more severe winters—according to early writers—than it does today. So it was temperature rather than the substitute animal which really fouled up the wildlife weather predictions. In Virginia today, however, the odds are fairly good that an obliging groundhog might appear on the appointed day, but the stuffed 'chuck traditionally planted on Capitol Square for photographers is still more reliable.

There are facts as well as fancies behind the legend now obsolete but hard to shake. Before scientific methods were developed, man had to depend on the behavior of animals, the migrations of birds, the portents of wind and sky for clues to seasonal and weather changes. The

emergence of certain animals from hibernation and the appearance of great flocks returning northward were especially welcome prophecies of spring.

Coming almost mid-way between the winter solstice and the spring equinox, February 2 was celebrated by the early Romans who are said to have burned candles on that day in honor of their goddess, Februa, celebrating the birth of life as symbolized by the returning spring.

In the Christian church the day became Candlemas, a feast to celebrate the Purification of the Virgin and the Presentation of Christ in the Temple (Luke ii, 22-29) and its name came from the practice of blessing the candles for the altar and other sacred uses on that day.

Crossing the English Channel, we find the legend as we know it taking shape. February 1 is the festival of St. Bride or Bridget, patron saint of fertility. Farm folk put out a bed of corn and hay and someone would go outside and call: "Bridget, Bridget, come in, thy bed is ready." The hospitality was supposed to remind the saint it was time to start warming things up.

The Scots had a piece of doggerel to be recited for the occasion:

If Candlemas be bright and clear,
There'll be twa winters in the year.

A bright clear day would mean the saint hadn't heard or was angry, but if she had taken the hint it would be warm and probably drizzly. We can easily see how the animal lore and wishful thinking of the pagans had been mixed up with the rituals of the church as so often happened and this was where the hedgehog came in—or, rather, out. At least he was supposed to, but doubtless many a sluggard hedgepig had to be prodded out of his nest just as in America impatient weather watchers have dug up many a hibernating groundhog which responded not at all to gentle slugging but could be killed by the shock of too rude an awakening.

The woodchuck is a species (*Marmota monax*) within the genus of marmots, which belongs to the squirrel family and to the order of rodents. The 28 species and subspecies of the genus compose three different groups: the common eastern woodchuck, the yellow-footed marmot, and the hoary marmot or rockchuck of the west.

When the first settlers came, the woodchuck was a forest creature which had to grub for its food and cope with many carnivorous animals, but it soon moved in on the easy food supply of the pastures, orchards and vegetable gardens. Some still live in forests and here we have another sidelight on the Candlemas legend, for if there are any reliable woodchuck weather prophets, they are more apt to be found among those leaner forest dwellers who don't go to sleep so early or drowse so late.

There is a discrepancy of theories about how the animal got its name. Some say Devonshire colonists, finding the chunky creature in the woods called it "chuck", their dialect for "little pig." Others claim the name was derived from the Algonquin word, "wejack", from which "woodshaw", "woodshuck" and eventually "woodchuck" evolved. The French Canadians called it "siffleur", meaning "whistler."

When man and fire had narrowed the woodchuck's original domain, the adaptable little marmot really came into its own. Unlike much other wildlife which dwindled or disappeared with the invasion of civilization, the 'chuck thrived on the very conditions that might have been his undoing. He burrowed under hedgerows, stone walls, and grew fat on fare provided by exasperated farmers, especially truck gardeners. The farmers hunted him, but his natural enemies became fewer. To add injury, the groundhog's hidden exit holes proved so many booby traps for horses and cattle and his mounds interfered with farm machinery.

Many wild animals like the rabbit and muskrat seem to maintain their numbers by sheer breeding power. Next to them, the groundhog's average single litter of four sounds inadequate and in some areas it has been found that well over half the females do not breed as yearlings.

The survival of the groundhog is less a matter of breeding potential than of efficient living, with few wants which can be satisfied within a short radius of its den, exceptional adaptability to environmental changes, and sanitary living habits. "There is no animal so perfectly clean in its habits as this marmot," says Dr. J. D. Goodman in "American Natural History." It buries its excrement and, when it feels that death is imminent, crawls into hollow logs, under stumps or even feebly digs a shallow grave for itself in soft earth. It does not seem to be bothered seriously by disease or parasitic infection, though 'chucks are susceptible to tularemia.

Wildlife experts rate the woodchuck next to the beaver in engineering skill. He is very particular about the terrain he chooses for his burrow, seldom denning where the soil is clay or underlaid with slate or shale, preferring open pastures with granite or limestone outcroppings, and always fussy about good drainage.

Once the spot is selected, the 'chuck plunges into the earth, digging his two-foot long body out of sight in about five minutes. He slashes roots with his sharp incisor teeth, throws the earth backwards from his powerful forefeet to his outspread hind feet which clear the debris from the tunnel. He burrows into the earth from seven to 25 feet and along the passage, which quickly narrows to his own size and usually slopes downward, he creates dens and blind pockets. Ordinarily, there is a mound of earth at the entrance which he uses for a lookout and for sunbathing, but exit holes are often ingeniously concealed.

A good hole, strategically located near an abundance of food, never remains vacant long. The groundhog is in real danger only when he is outside. His main predators are fox and dog, though larger hawks and owls may capture unwary little ones. A 'chuck will move away if his den is tampered with too often.

The groundhog is apt to be surly and will click his teeth threateningly when approached. Usually he pre-

fers to avoid actual combat, but is a fierce and formidable fighter when he finds the encounter unavoidable. "Can he kill 'chucks?" is a question to discover the mettle of a dog, for an infuriated ten-pound 'chuck can drive off a 35-pound dog. Though wary and alert for the most part, with a whistle of alarm at the hint of danger, it is not unusual for a woodchuck to act contemptuous of perils and some have paid a fatal price for their curiosity. When two people are hunting, if one stays in sight but well out of range while the other does the stalking, the 'chuck is apt to keep his eye on the first and fall a prey to the other. But sun glinting on a rifle barrel can send a 'chuck flying and even the snick of a rifle bolt may cost the quarry.

The groundhog prepares for hibernation by building up a reserve of fat while food is still plentiful and the weather warm. In late September or early October it chooses its winter den, often protected by hedgerow or woodlot, and rolls its bulging self into a ball. In this "cold sleep" its temperature drops to 50° (F.) or even less, its breathing slows to once a minute and its heartbeat to seven. Experts say that a mirror placed before the mouth or nose of a hibernating 'chuck will not be clouded by breath and that the animal can survive in a jar of carbonic acid gas or under water an hour or more without suffocating or drowning. Even sharp jabs with a stick will not rouse a hibernating 'chuck and some writers have described the animal being rolled like a hoop but still "obstinately inert". Fortunate is the woodchuck who *can* sleep through it all under such abnormal circumstances, for his awakening must be gentle or gradual when it does not occur normally or it can cause death.

In the middle Atlantic states, most groundhogs emerge from their hibernation dens late in February or with the thaws of early March and set out in search of a mate. In April or early May the four or five—occasionally six—young are born and about mid-June or soon thereafter the young 'chucks are on their own. By late August they are full grown or nearly so and scatter to dig their own burrows.

It is hard for a home gardener who has caught a woodchuck clipping his choice broccoli or for a farmer who has surprised the "varmint" stripping his corn to find any words of praise for the "little bear." However, the 'chuck does have an important role in the wildlife balance.

The many tunnels that he digs aerate the soil. The rabbit who cannot dig his own burrow depends on the groundhog's for underground security from winter snow and ice. Many a fox den is but an enlarged woodchuck hole. Skunks can dig for themselves, but seem to prefer old 'chuck tunnels for brood dens in summer as well as for winter quarters. The burrows are used in emergency by porcupines, raccoons, grouse, and snakes, and even pheasants have been known to take refuge in them. Mud turtles lay their eggs in earth at the entrance to the holes and birds use it to dust themselves. A lot of small animals would be dispossessed and miss the woodchuck if he were gone.

Young lean woodchuck meat is quite palatable and the more enthusiastic have compared its flavor to chicken. Like many of the small game animals, the two little glands must be removed from the forequarter in preparing the meat for cooking or it will have a strong unpleasant taste. Before Prohibition it was sold at corner saloons for a quarter a pound and appeared on free lunch counters as "pickled rabbit." Many hunters use 'chuck as a year-'round fresh dog food. The meat and pelt both are valued by the Indians of Canada, and Alaska, but there is no commercial market for woodchuck pelts in America. In Europe, however, there is some demand for the fur.

The groundhog ranks highest in esteem as a challenging target for small-bore rifle shooting. The best shooting begins towards the end of June, after the first hay-cutting, with cover removed and visibility good. It takes a good rifleman who knows his weapon and his quarry to go into a precision business like woodchuck hunting and he's the modern equivalent of the squirrel-trained frontiersmen who mowed down the redcoats at New Orleans with their deadly aim.

As a recognized sport, woodchuck hunting got its start late in the 19th century and it takes as expert marksmanship and alert senses as big game hunting. The quick and wily target sharpens the eye and keeps hunters in practice between season, for this is a type of hunting which can be enjoyed when most other game is protected by closed seasons. Most farmers welcome woodchuck hunters, but always ask permission and check local regulations. A few states have elevated the 'chuck to the status of game animal, like Pennsylvania which has established a season of July 1 to September 30. Others still offer bounties for woodchuck tails.

Today the most densely populated 'chuck grounds are in New England, Pennsylvania, Ohio, Indiana. They are also plentiful in eastern Maryland, western North Carolina, and are abundant statewide in Virginia, except for the extreme southeastern portion.

Don't gamble on finding chucks on rainy days, for they won't come out if they can help it, but do like to munch on leaves after a shower. They feed in the earlier part of the morning and late in the afternoon, sometimes early in the evening. The 'chucks on our land were seldom much in evidence after 7:30 A. M.

Some hunters use their deer rifles on 'chucks to keep in practice. Others invest in special vermin rifles which they equip with a 10- or 12-power telescopic sight. But many a farm boy learns to hunt by killing 'chucks with his single-shot .22 which has the advantage of making little noise, using inexpensive ammunition and having no recoil. The modern hollow-point bullet is recommended as the best 'chuck load for a regular .22. It takes a well-placed shot and the right ammunition or the wounded 'chuck will get away into his burrow.

So, even if the 'chuck falls short as a weather prophet, he's a wildlife and soil conservationist with his burrows which are home to so much small game, and he himself furnishes some of the best sport in the field and, in most states, all the year 'round.

Battle of The Stags on Dry River

T. J. Starrett, Conservation Officer of Hinton, Virginia, has sent in the story and picture of a fierce and unusual battle between stags, which was reported to him by three hunters who had been camping at Riven Rock, preparing to hunt deer in the mountainous section when the season opened the following morning.

The living and the dead stag, as found by hunters, with antlers interlocked.

They found the stags, with antlers interlocked, one living and one dead, beside a water hole, on Dry River in Rockingham County. The dead stag had been blinded and gouged in the brain by the antlers of the living deer and its hind quarters had been torn and clawed by a bear.

The hunters—Jonas D. Kessel, John G. Kessel and Kenneth G. Tilman—set a fine example of sportsmanship in reporting the accident to Conservation Officer Starrett at his home. After considerable effort, Starrett and the hunters were able to rope the live stag and chop off the antlers of the dead stag so the other could be released.

Ironically, the three hunters didn't even see a single live legal deer during the whole first week of the hunting season.

Dr. Tyler, Tidewater Conservationist, Passes

Dr. George Colbert Tyler, former member of the Game Commission and past president of the Virginia Peninsula Sportsmen's Association, died November 21 on his way home from a medical meeting at White Sulphur Springs, West Virginia.

A native of Powhatan County, he attended Randolph-Macon College, Virginia Polytechnic Institute, and received his M.D. from the University of Tennessee medical school. He interned at Washington and Abingdon, Virginia, and began private practice at Heathsville in 1924. At the time of his death, Dr. Tyler was a member of the medical staff at the Newport News Shipyard Clinic and a staff member of Riverside Hospital.

In his "Forest, Field and Stream" column in the Newport News **Times Herald**, George B. Johnson says of Dr. Tyler:

"Right now we have a well-managed wildlife program in the State . . . This progressive program towards wildlife did not come easily . . . In that dark night of wildlife affairs, Dr. G. C. Tyler spoke out strongly. He was fearless and uncompromising because he knew he was right. Dr Tyler, while serving on the game commission, forced the issue of a non-partisan, nonpolitical game commission, relying heavily on trained wildlife technicians."

Dr. Tyler is survived by his wife, the former Miss Hilda Lankford of Morattico, two sons, Colbert McC. Tyler, attending the U. S. Naval Officer Candidate School at Newport, R. I., and Colbourne Tyler, a student at Randolph-Macon, his mother, Mrs. P. M. Tyler of Chester, and one brother, Dr. Franklin A. Tyler of Richmond.

Draining of Douthat Lake Expected to Improve Fishing

Douthat Lake in Douthat State Park, Alleghany County, has been drained by the Department of Conservation and Development in order to repair a gate and the Commission of Game and Inland Fisheries took advantage of the draining to study the fish population, to remove rough fish and to gain valuable information for managing waters in the section.

When the fish were transferred to nearby ponds, the opportunity was taken to remove rough fish, principally suckers, and to realign the fish population in general so that there would be better fishing.

Part Albino Coot Taken At Back Bay

William M. Snider, writer from Virginia Beach, reports that an unusually colored coot was taken at

Mounted part albino coot which was taken at Back Bay by Dr. Winkfield of Strasburg.

Back Bay by Dr. J. M. Winkfield of Strasburg on the last day of the 1952 season. The part albino bird was mounted by Vernon W. Halsted and placed on display at the Back Bay Headquarters.

THE FUTURE OF SCS

In answer to widespread criticism that reorganization would cripple the soil conservation program, Secretary Benson has made the following statement:

"The principal area of complaint has been regarding the proposal to change the field organization of the Soil Conservation Service by eliminating regional offices and strengthening State Soil Conservation offices.

"I am confident that the great majority of soil conservation workers and the members of the boards of soil conservation districts appreciate the sincerity of our purpose to advance soil conservation. At the same time I want to correct the misleading and unfounded statements issued by certain officers of the National Association of Soil Conservation Districts. The organized campaign by this small group has served to confuse the issues and to obscure our real intentions. To set the record straight I have sent to all boards of supervisors of soil conservation districts a statement of our purpose and specific answers to specific questions. I want to restate my position on certain of those points dealing with plans for the Soil Conservation Service and the Agricultural Extension Service.

"We do *not* now and never have planned to consolidate the Soil Conservation Service with the Agricultural Extension Service.

"We do *not* now and never have planned to contract with the Land-Grant Colleges for technical assistance to the Soil Conservation Districts.

"I am fully aware of the need for conserving and improving our agricultural resources. The SCS will continue as a separate agency of the Department. I am determined that it shall continue to serve farmers even better through technical aid to Soil Conservation Districts. The Department of Agriculture has signed a memorandum of understanding with each Soil Conservation District. We shall continue the cooperation provided for in these memoranda.

"The watershed and flood control projects will continue to be emphasized. Where these projects involve more than one State, the work on them will be coordinated. So important is this work that every effort will be made to get underway and complete as soon as possible the previously authorized projects.

"Effective today the State offices of the Soil Conservation Service are given greater responsibility for program formulation and execution and the Regional Offices are abolished. Pending the liquidation of the Regional Offices, the Regional Directors and their personnel are transferred to the staff of the Administrator, Soil Conservation Service."

STATES RECEIVE NEARLY $12 MILLION FROM WILDLIFE FUNDS

A total of $11,784,000 has been apportioned to the 48 states for the restoration and development of their wildlife resources during the fiscal year 1954. Of the total, $218,808 was allocated to Virginia for its wildlife restoration fund.

This amount, which becomes available to state game departments under the terms of the Pittman-Robertson Act, represents an increase of $1,759,494 more than last year's apportionment of $10,025,106.

To obtain the Federal grants for wildlife projects, each state must contribute not less than 25 percent of project costs. On the basis of one dollar from the state for every three of general funds, $15,712,800 will be available to the states for Pittman-Robertson wildlife work selected and carried out by them.

JOHNNY PINESEED

Who is the Johnny Pineseed of '53? Before telling his story let's look back a moment in history. In the year 1806 a young man left his warm cabin and a budding orchard near Pittsburgh and started down the Ohio River. The two canoes he lashed together carried a curious cargo into what was then wilderness. This cargo was appleseeds. For 40 years this man tramped all over Ohio, Indiana and Illinois, starting orchards beside cabins and on river banks. The Indians named him "The Great White Medicine Man" because he scattered seeds of healing herbs. To the pioneers and to us he is known as "Johnny Appleseed." Even today the farmers in West Iowa point proudly to the thriving old trees sprung from Johnny's seed brought west by the pioneers whom he met on their journey.

Now in 1953, more than 140 years later, we find other outdoorsmen rallying to the same idea old Johnny started in 1806, the major difference being that instead of one lone figure, there are about 250,000 Virginia hunters, fishermen and sportsmen sowing pine seed.

This was brought about by the 1952 General Assembly, which passed a resolution asking the Virginia Forest Service to prepare small envelopes of pine seed for distribution with each purchase of a hunting and fishing license. The envelopes measure 2½" x 3½" and have a gummed flap. They are glassine, thus permitting the seed to be seen. The Johnny Pineseed of the Piedmont and Tidewater Virginia will receive loblolly pine seed in their envelopes, while the Johnny Pineseed of the mountainous section will receive white pine.

The sportsmen plant these seed in an effort to keep good timber growing in their hunting and fishing areas.

The Johnny of 1806, could he look back, would marvel at the expansion Virginia sportsmen have made of his idea.

But, to these sportsmen, who will enact the part of Johnny Pineseed this year it's a chance to help reseed a large number of areas while enjoying a day with the rod or gun.

Many of these seed will be planted while these careful sportsmen are "heeling in" their pipe ashes or crushing their cigarettes and matches into damp mineral soil. Others will be planted around campsites where campfires have been safely extinguished.

Possibly in the not too distant future landowners and sportsmen alike will point proudly to the thriving pine trees which were planted and protected from fire by the modern day "Johnny Appleseed"— the Johnny Pineseed of '53.

DANISH AWARD TO GOVERNMENT ORNITHOLOGIST

Frederick C. Lincoln, special assistant to the director of the Fish and Wildlife Service, Department of the Interior, has been awarded an honorary membership in Denmark's Dansk Ornithologisk, leading ornithological association. A hand-inscribed certificate and a silver medal were presented to Mr. Lincoln in appreciation of his contributions, on an international scale, to the science of birds.

Mr. Lincoln began his Federal service in 1920 by developing the bird-banding work of the Bureau of Biological Survey, parent organization of the present United States Fish and Wildlife Service. This work, inherited from the American Bird Banding Association, was concerned with the placing of identifying bands on the legs of wild birds so that their movements and other factors in their life histories could be traced.

An authority on the habits and movements of birds, Mr. Lincoln made major contributions to the "flyway" concept of bird migrations and to the waterfowl inventory. He has taken a leading role in international bird conservation.

Frederick Lincoln has been a frequent visitor to Virginia, where he has spoken to many organizations during recent years.

NATIONAL PROFESSIONAL GROUP PROMOTES CONSERVATION

The Conservation Education Association was organized at Purdue University last October to supersede the National Committee on Policies in Conservation Education which was dissolved, according to the new president, Dr. A. G. Peterson, president of the Eastern Montana College of Education. Other officers of the new association are Dr. Howard Michaud, of Purdue University; Dr. Richard L. Weever, University of Michigan; and William Voight, of the Izaak Walton League.

"I'm after the big ones!"

AUDUBON SCREEN TOURS AT CHARLOTTESVILLE

Mrs. Colgate W. Darden announces the securing of the Audubon Screen Tours for Charlottesville this winter by the Turkey Sag Bird Club. The lectures will be given in Maury Hall at the University of Virginia. Prices will be lower than usual, since the lectures are subsidized by the Turkey Sag Club. Lecturers and dates are as follows:

February 15—Fran William Hall—"South to Siesta Land."

March 24—Allan Cruickshank—"Below the Big Bend."

NEW YORK FOXES FOUND NOT GUILTY

During the past 10 years, many New York sportsmen have pointed to an abundance of foxes as the reason for the low numbers of pheasants. This accusation, resulting from an understandable desire to fix the blame for the short supply of game, has been proved unfounded by the New York State Conservation Department.

In 1947, the conservation agency selected two large-size areas in central Seneca County for a study of fox-pheasant relationships. One tract, surrounded on three sides by water, was scheduled to undergo an intensive fox-reduction trapping program. The other, bounded by water on only one side, would not be trapped, thereby serving as a natural checking ground against the first. About the same number of foxes were on each area, but there were nearly three times as many pheasants on the peninsula-like territory.

Before the release of banded pheasants in both places, state trappers achieved at least a 75 per cent reduction of foxes in the first area. Control was held at 80 per cent throughout the many remaining months of the study. During each subsequent hunting season up to the spring of 1949, the birds shot by hunters were tallied at checking stations. Comparison of the ratio of banded to unbanded ringnecks making up the kill from each area was used to determine the effectiveness of fox control as a means of increasing pheasant stocks.

No benefit to pheasants was shown from the rigid fox control. Even if it were the answer, the researchers concluded, it would be impractical because the annual cost of reduction trapping was $100 a square mile. Persons wishing to read the full report may obtain a booklet from the Division of Fish and Game, State Conservation Department, Albany, New York, entitled, "A Study of Fox Control as a Means of Increasing Pheasant Abundance."

Wildlife Questions and Answers

Ques.: My buck deer weighed 120 pounds, field dressed, at the checking station. Can you tell me what the live weight would be?

Ans.: 150 paunds. The general rule is ta "add a quarter ta the dressed weight ta find the live weight."

Ques.: How many different kinds of birds do we have in Virginia and how does this compare with other states and countries?

Ans.: The Virginia Saciety af Ornithalagists recagnizes well aver 400 species and subspecies in its check list. The average state lists far fewer birds than this. Bird life in the tropics is much mare abundant than in temperate climates. Dr. Alexander Wetmare, well-knawn arnitholagist with the Smithsanian Institute, says that in tiny Panama alane same 1,300 farms af birdlife are recagnized. Venezuela and Brazil are said ta have 3,000 different farms.

Ques.: Do beavers destroy many commercially valuable trees?

Ans.: The trees preferred by beavers, af which the aspen is a favarite, are af relatively little cammercial value.

Ques.: Why is the bald eagle called "bald?"

Ans.: The bald eagle was named far its white head feathers in o time when the ward "bald" retained its ancient meaning af "white." In that sense it is faund in ather animal names like that af the baldpate.

Ques.: Are the quills of the porcupine shot?

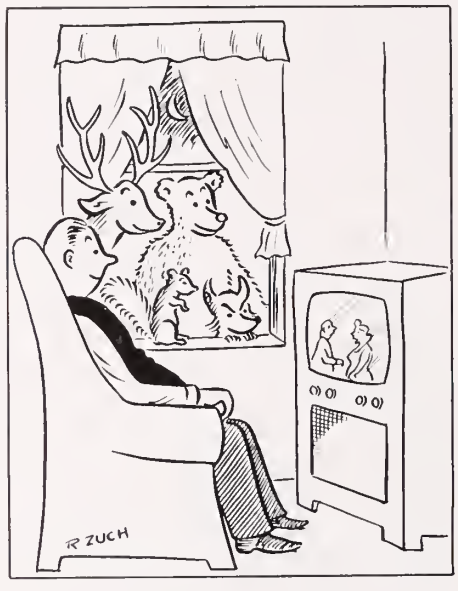
Ans.: No. Porcupine quills are used more like daggers than like arrows, for he cannat really shaat them, thaugh sametimes in a limited sense they might be said to be thrawn. Setan quates several accaunts ta show how the porcupine, by a sudden jerk af his powerful toil, has thrawn laase quills same distance. Usually, however, they leave the creature anly after the point has penetrated the enemy, for at the parcupine end they are set in rather laasely, but can be tightly fixed by barbs ance they have entered the flesh af the parcupine's adversary.

Ques.: What sort of tree is the spruce pine?

Ans.: The spruce pine is just anather lacal name far the evergreen known papularly as the hemlack. A splendid arnamental tree, it makes a fine evergreen hedge. In Virginia its range is restricted ta the higher elevatians af the mauntain areas.

Ques.: What chances for survival do tame deer have after being returned to the wild?

Ans.: Their chances af survival are small. Hand-raised deer seldam became wild, but tame bucks became dangeraus during the mating seasan.



Ques.: Please tell me what sort of food to use for an angle worm bed.

Ans.: Decampased leaves can be used, alang with carn meal, caffee graunds ar graund beef suet. Same warm-raisers recammend sugar in same cheap form like ordinary malasses which can be spread an a burlap bag and applied ta the bed, with the sticky side next to the sail.

Ques.: How long ago did the buffalo disappear from Virginia?

Ans.: The buffalo, ar bisan, last accurred in Virginia at the end of the 18th century. One was killed on New River as late as 1797. When the first settlers came, the bisan was quite comman thraughaut the state, at least to the edge of the Coastal Plain. A travelague written by Sir William Argall in 1613 gives two reasans why the buffalo disappeared: " . . . very gaad and wholesome meate, and are very easie ta be killed, in regard they are heavy, slaw, and not sa wild as other beasts of the wildernesse."

Ques.: Can groundhogs climb trees?

Ans.: Yes, this graund-dwelling member af the squirrel family is capable af climbing if it wants ta escape pursuit ar is seeking edible leaves. Hawever, ardinarily, it daes nat climb very high, preferring law shrubby grawth.

Ques.: Can you tell me why animals' eyes shine at night?

Ans.: Animals' eyes shine at night far the same reason that raadside reflector buttans shine. Behind the retinas af these nacturnal animals is what amaunts ta a cluster af mirrors and the faint maanlight or starlight by which they must see is reflected by these mirrars.

Ques.: Can you give an explanation of the expression it "rains frogs?"

Ans.: This erroneaus belief is fastered by the accurrence af many small frags happing alang a railroad or through grassy meaddows after a heavy rain. Befare the rain, they were hiding in vegetatian in ar near the pand af water where they developed fram tadpales. Instinct warned them that their chances far survival wauld be better if they left the surraundings while their pathway aver land was wet, sa immediately after the rain they ventured aut in large numbers. Many survivars return ta the hame pand the follawing year ta mate and depasit their eggs.

Ques.: Is trapping worth while in Virginia?

Ans.: Yes, trapping is still warth while far certain species af furbearers in the state. The mast impartant furbearer in Virginia is the muskrat, and thousands af yaung and adult trappers make a substantial bit af extra maney trapping this radent. Trapping interest in the lang-haired furs has decreased considerably in recent years because of changes in women's fashians which have decreed different fur styles.

Ques.: How many litters does the gray squirrel produce each year?

Ans.: There are twa main breeding periods each year, althaugh some few squirrels may produce litters during practically every month. The spring litter is barn in mid-February and leaves the nest abaut the first af April. The fall litter is barn during the first half af August and leaves the nest the latter part of September ar the first af October.

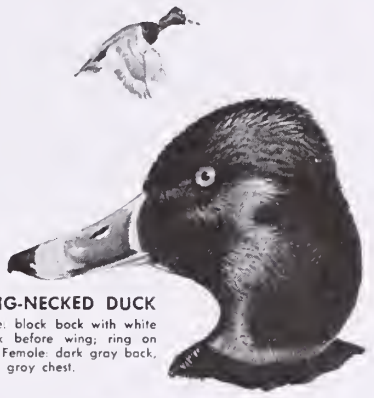
Ques.: Who is considered the father of wildlife management in America?

Ans.: The late Aldo Leopold af Wiscansin is generally considered the father af wildlife management. President Theadare Raasevelt ond other conservationists have contributed much to the general field af wildlife conservation.

Identifying the Diving Ducks

REDHEAD
Male: raund rufaus head, black chest; gray. Female: indistinct face-patch near bill.

CANVASBACK
Has lang profile, white back, heavy front appearance.



RING-NECKED DUCK
Male: black back with white mark before wing; ring on bill. Female: dark gray back, light gray chest.

LESSER SCAUP
Male: blue bill, black head and chest. Female: white patch in back of bill.

GREATER SCAUP
Male: similar to lesser scaup but larger, head rounded.

BUFFLE-HEAD
Male: small duck with puffy white head. Female: dark body with small white check spot.

RUDDY DUCK
Small chunky body with cocked tail. Male: gray, white checks. Female: similar.

AMERICAN GOLDENEYE
Male: white appearing with black back and puffy black head. White spot between eye and bill. Female: grayish, no spot.

FEBRUARY IS A GOOD TIME TO REPAIR BIRDHOUSES

Get them in shape well ahead of the nesting season. Properly seasoned and weathered homes will attract more birds.

(Commission photos by Kesteloo)

Winter cleonout is importont. Birds, like people, like cleon homes.

An importont operotion is delousing ond disinfecting.

Roof ond sides moy require noiling or replacement.

Old surfoces should be touched up, sonded. Proper upkeep slo down decoy.

House is now reody ncy.